Remarks:

This amendment is submitted in an earnest effort to advance this case to issue without delay.

The instant invention relates to an apparatus for making a nonwoven web. Such a web is typically made by extruding a multiplicity of filaments. To make a so-called felt the filaments are broken up to form short discrete filaments that fall in random fashion to criss-cross one another, and to make a fleece the filaments are left continuous but are deposited such that they curl and also cross one another. Either way the filaments are deposited on an upper horizontal reach of a belt. To initially compact the web, the belt may be foraminous and pass over a suction box (see 16 in FIG. 1).

The web 1 travels downstream in the right-to-left (FIG. 2) or upstream-to-downstream travel direction. This web, prior to calendering or some other downstream processing step, is very fragile. The only thing holding it together is the inherent stickiness of the filaments where they contact one another at the crossing points, and this is minor since the force pressing the filaments together is basically determined by the inconsequential weight of the filaments perhaps augmented by the suction through the belt. In any case the web 1 is not something that can be handled roughly. Furthermore the web 1 tends to stick somewhat to the belt 3 with about as much force as the filaments stick to each other, even when the belt 3 is made of some material having a nonstick surface.

The system of this invention is aimed at getting the fragile web 1 off the belt 3 without damaging it, so that it can subsequently be calendered or treated.

This is done according to the invention as defined in amended claim 1 by blowing air through perforations in the downstream support roller and through the foraminous belt on it so as to "lift" the web from the belt. In fact the force of the fluid, normally air, coming through the roller 6 and through the belt 3 is typically set to be about equal to the force adhering the web 1 to the belt 3, so that the belt separates smoothly and passes as shown in FIGS. 1 and 3 in a straight line into the nip between the calender rollers 22 and 23. The web 1 is in fact not deformed at all according to the instant invention as it separates from the belt 3 due to this fluid-lifting action.

The claims stand rejected on a three-barrel combination of US 6,096,668 of Abuto, US 6,784,125 of Yamakawa, and US 5,031,280 of Demuth.

Abuto relates to the manufacture of an elastic film laminate. There is no discussion of any means for separating the web from the belt 121 it is formed on.

In Yamakawa a standard prior art system is used where the nonwoven mat is pulled up and off the web. The separation is done at a right angle as shown in FIGS. 1 and 3 and there is some discussion of this, namely column 1 lines 27-32:

> Since the freshly spun thermoplastic elastomer has highly adhesive properties, the spun filaments tend to adhere to the belt conveyor as well as to one another. As a result, it is necessary to apply a significant amount of tension to the nonwoven fabric to peel it from the belt conveyor.

The solution of Yamakawa is to use a roller above the belt to lift the web off at a right angle. This is the crux of the Yamakawa invention and is the basis of this patent.

Finally, US patent 5,031,280 of Demuth relates to a significantly different technology, not the formation of a nonwoven web produces by filaments extruded from a spinneret. Here a "carded sliver," which no-one skilled in the art would equate to a nonwoven web, is wound around a perforated roller from which air is blown to (see Abstract) "remove loose contaminations and also dirt and dust particles present in the loosened sliver." There is no discussion of any lifting of the sliver 10 off the roller, and this would be in fact impossible without damage to the sliver since it is apparently spanned so tightly around the roller that its thickness is reduced.

If the teachings of Demuth were applied to the system of Abuto, the rollers 108a, 108b, 110, 112, or 114 would conceivably be internally pressurized to clean the workpiece 105. If they were applied to Yamakawa, the rollers 2, 3, 4, 5, or 6 would similarly be internally pressurized to clean the web 131. There is no suggestion to pressurize a roller underneath a foraminous conveyor belt to lift a web off it. This suggestion can only come from the instant invention. It is not permitted to make such a hindsight rejection and use the novel teachings of a patent application to reject it, so the §103 rejection must fall.

For these reasons all the claims in the case are clearly in condition for allowance. Notice to that effect is earnestly solicited.

If only minor problems that could be corrected by means of a telephone conference stand in the way of allowance of this case, the examiner is invited to call the undersigned to make the necessary corrections.

Respectfully submitted,
The Firm of Karl F. Ross P.C.

by: Andrew Wilford, 26,597
Attorney for Applicant

22 August 2006
5676 Riverdale Avenue Box 900
Bronx, NY 10471-0900
Cust. No.: 535
Tel: (718) 884-6600
Fax: (718) 601-1099

Enclosure: Request for extension (one month)